

In the Claims:

Please cancel claims 3, 6, 11 and 13.

Please amend claims 1, 2, 4, 5, 7-10, and 12 as follows:

1. (Twice Amended) A fuel cell system provided with a fuel cell including an anode electrode disposed opposingly with an electrolyte interposed there between, for obtaining electromotive force by supplying fuel gas containing hydrogen to said anode electrode while supplying oxygen-containing gas containing oxygen to said cathode electrode, said fuel cell system comprising:

a gas/liquid separator for separating discharged components discharged from said fuel cell into gas components and water, an amount of said water which said discharged components are separated into by said gas/liquid separator being changed depending on an operation condition of said fuel cell; and

a flow rate control unit for controlling a flow rate of a cooling medium supplied to said gas/liquid separator for performing heat exchange with said discharged components,

wherein the flow rate of said cooling medium is controlled depending on the amount of said water, and said operation condition of said fuel cell is detected by detecting means for detecting at least any one of a current value or voltage value from said fuel cell, temperature of the discharged components introduced into said gas/liquid separator, temperature of said gas components discharged from said gas/liquid separator, and temperature of said water recovered by said gas/liquid separator.

2. (Amended) The fuel cell systems according to claim 1, wherein said flow rate control unit includes:

a pump for varying said flow rate of said cooling medium supplied to said gas/liquid separator; and

a control unit for controlling output of said pump on the basis of information detected by said detecting means.

4. (Twice Amended) A fuel cell system provided with a fuel cell including an anode electrode and a cathode electrode disposed opposingly with an electrolyte interposed therebetween, for obtaining electromotive force by supplying fuel gas containing hydrogen to said anode electrode while supplying oxygen-containing gas containing oxygen to said cathode electrode, said fuel cell system comprising:

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a gas/liquid separator for separating discharged components discharged from said fuel cell into gas components and water, an amount of said water which said discharged components are separated into by said gas/liquid separator being changed depending on an operation condition of said fuel cell ; and

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a temperature control unit for controlling a temperature of a cooling medium supplied to said gas/liquid separator for performing heat exchange with said discharged components,

wherein the temperature of said cooling medium is controlled depending on the amount of said water, and said operation condition of said fuel cell is detected by detecting means for detecting at least any one of a current value or voltage value from said fuel cell, temperature of the discharged components introduced into said gas/liquid separator, temperature of said gas components discharged from said gas/liquid separator, and temperature of said water recovered by said gas/liquid separator.

5. (Amended) The fuel cell system according to claim 4, wherein said flow rate control unit includes:

a radiator arranged for a piping tube for circulating and supplying said cooling medium to said gas/liquid separator;

a cooling fan provided together with said radiator; and

a control unit for controlling output of said cooling fan on the basis of information detected by said detecting means.

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7. (Twice Amended) A fuel system provided with a fuel cell including an anode electrode and a cathode electrode disposed opposingly with an electrolyte interposed therebetween, for obtaining electromotive force by supplying fuel gas containing

hydrogen to said anode electrode while supplying oxygen-containing gas containing oxygen to said cathode electrode, said fuel cell system comprising:

a gas/liquid separator for separating discharged components discharged from said fuel cell into gas components and water, an amount of said water which said discharged components are separated into by said gas/liquid separator being changed depending on an operation condition of said fuel cell; [and]

a flow rate control unit for controlling a flow rate of a cooling medium supplied to said gas/liquid separator for performing heat exchange with said discharged components, the flow rate of said cooling medium being controlled depending on the amount of said water; and

a temperature control unit for controlling a temperature of a cooling medium depending on the amount of said water,

wherein said operation condition of said fuel cell is detected by detecting means for detecting at least any one of a current value or voltage value from said fuel cell, temperature of the discharged components introduced into said gas/liquid separator, temperature of said gas components discharged from said gas/liquid separator, and temperature of said water recovered by said gas/liquid separator.

8. (Amended) The fuel cell systems according to claim 7, wherein said flow rate control unit includes:

a pump for varying said flow rate of said cooling medium supplied to said gas/liquid separator; and

a control unit for controlling output of said pump on the basis of information detected by said detecting means.

9. (Amended) The fuel cell system according to claim 7, wherein said flow rate control unit includes:

a radiator arranged for a piping tube for circulating and supplying said cooling medium to said gas/liquid separator.

a cooling fan provided together with said radiator; and

a control unit for controlling output of said cooling fan on the basis of information detected by said detecting means.

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10. (Twice Amended) A gas/liquid separation method for a fuel cell system for supplying, to a gas/liquid separator, discharged components discharged from a fuel cell including an anode electrode and a cathode electrode disposed opposingly with an electrolyte interposed therebetween, and separating said discharged components into gas components and water, an amount of said water which said discharged components are separated into by said gas/liquid separator being changed depending on an operation condition of said fuel cell, said method comprising the steps of:

detecting changes in the amount of said water ; and

controlling a flow rate of a cooling medium supplied to said gas/liquid separator for performing heat exchange with said discharged components, depending on said changes in the amount of said water,

wherein said operation condition of said fuel cell is detected by detecting means for detecting at least any one of a current value or voltage value from said fuel cell, temperature of the discharged components introduced into said gas/liquid separator, temperature of said gas components discharged from said gas/liquid separator, and temperature of said water recovered by said gas/liquid separator.

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12. (Twice Amended) A gas/liquid separation method for a fuel cell system for supplying, to a gas/liquid separator, discharged components from a fuel cell including an anode electrode and a cathode electrode disposed opposingly with an electrolyte interposed therebetween, and separating said discharged components into gas components and water, an amount of said water which said discharged components are separated into by said gas/liquid separator being changed depending on an operation condition of said fuel cell, said method comprising the steps of:

detecting changes in the amount of said water; and

controlling a temperature of a cooling medium supplied to said gas/liquid separator for performing heat exchange with said discharged components, depending on said changes in the amount of said water,

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wherein said operation condition of said fuel cell is detected by detecting means for detecting at least any one of a current value or voltage value from said fuel cell, temperature of the discharged components introduced into said gas/liquid separator, temperature of said gas components discharged from said gas/liquid separator, and temperature of said water recovered by said gas/liquid separator.
